CRACTCRGAG GGGACTCAGA GCAAGTCTAG ATTTGTGTGG CAGAGAGAGA CAGCTCTCGT 180 CRACTCRGAG GGGACTCAGA GCAAGTCTAG ATTTGTGTGG CAGAGAGAGA CAGCTCTCGT 180 TTGGCCTTGG GGAGGCACAA GTCTGTTGAT AACCTGAAGA CA 2222 ATG GAT GTC GAT GAG GGT CAA GAC ATG TCC CAA GTT TCA GGA AAG GAG MET ASP Val ASP Glu Gly Gln Asp Met Ser Gln Val Ser Gly Lys Glu 1 15 AGC CCC CCA GTC AGT GAC ACT CCA GAT GAA GAG GAG GAT GAG CCC ATG CCT Ser Pro Pro Val Ser Asp Thr Pro Asp Glu Gly Asp Glu Pro Met Pro 20 25 30 GTC CCT GAG GAC CTG TCC ACT ACC TCT GGA GCA CAG CAG AAC TCC AAG Val Pro Glu Asp Leu Ser Thr Thr Ser Gly Ala Gln Gln Asn Ser Lys 35 40 AGT GAT CGA GGC ATG GGT GAA CGG CCT TTC CAG TGC AAC CAG TCT GGG Ser Asp Arg Gly Met Gly Gln Arg Pro Phe Gln Cys Asn Gln Ser Gly 50 55 GCC TCC TTT ACC CAG AAA GGC AAC CTC CTG CGG CAC ATC AAG CTG CAC Ala Ser Phe Thr Gln Lys Gly Asn Leu Leu Arg His Ile Lys Leu His GS 70 75 TCG GGT GAG AAG CCC TTC AAA TGC CAT CTT TGC AAC TAT GCC TGC CGC CAL ALa Ser Phe Thr Gln Lys Gly Asn Leu Leu Arg His Ile Lys Leu His GS GS CAG GAG GAC GAC CTC CTG CGG CAC ATC AAG CTG CAC Ala Ser Gly Glu Lys Pro Phe Lys Cys His Leu Cys Asn Tyr Ala Cys Arg 80 CGG AGG GAC GCC CTC ACC GGC CAC CTG AGG ACC CTC GTG GAC TCC GCC Ser Gly Glu Lys Pro Phe Lys Cys His Leu Cys Asn Tyr Ala Cys Arg 95 CGG AGG GAC GCC CTC ACC GGC CAC CTG AGG ACC CTC GTG GAC AGC TCC GTC GCC CTC CTC ACA AAA TGT GGC TGC CGC CTC ACA AAA TGT GGA TAT TGT GGC CGC ACA TA AAA CAG CGA AGC TCC TTG GTA AGA ATG ATG ATG ATG ATG ATG ATG	LLAY	CGTT	CT A	CCTT	CTCT	G AA	CCCI	AGTG	GTG:	rgtc	AAG (3CCG(SACTO	G G	AGCT:	rgggg	60
ATG GAT GTC GAT GAG GGT CAA GAC ATG TCC CAA GTT TCA GGA AAG GAG MAT AAP VAI ASP Glu Gly Gln ASP MET SET Gln VAI SET Gly Lys Glu 1 5 10 15 15 10 15 15 10 15 15 10 15 15 10 15 15 10 15 15 10 15 15 10 15 15 10 15 15 10 15 15 10 10 15 15 15 10 10 15 15 15 10 10 15 15 15 10 10 15 15 15 10 10 15 15 15 10 10 15 15 15 10 10 15 15 15 10 10 15 15 15 10 10 15 15 15 10 10 15 15 15 10 10 15 15 10 10 15 15 15 10 10 15 15 15 10 10 15 15 15 10 10 15 15 15 10 10 15 15 15 10 10 15 15 15 10 10 15 15 15 10 10 15 15 15 10 10 15 15 15 10 10 15 15 15 10 10 15 15 10 10 15 15 10 10 10 15 15 10 10 10 10 10 10 10 10 10 10 10 10 10	GAAC	AGGA	AG A	.GGAA	.GAGG	A AT	CTGC	GCT	CAT	CCAG	GGA 1	rcag(GTC	T TC	CCA	AGTGG	120
### ATG GAT GTC GAT GAG GGT CAA GAC ATG TCC CAA GTT TCA GGA AAG GAG Met Asp Val Asp Glu Gly Gln Asp Met Ser Gln Val Ser Gly Lys Glu 1 5 10 15 15 #### AGC CCC CCA GTC AGT GAC ACT CCA GAT GAA GGG GAT GAG CCC ATG CCT Ser Pro Pro Val Ser Asp Thr Pro Asp Glu Gly Asp Glu Pro Met Pro 20 25 30 #### GTC CCT GAG GAC CTG TCC ACT ACC TCT GGA GCA CAG CAG CAG ACC TCC AAG Val Pro Glu Asp Leu Ser Thr Thr Ser Gly Ala Gln Gln Asn Ser Lys 45 #### AGT GAT CGA GGC ATG GGT GAA CGG CCT TTC CAG TGC AAC CAG TCT GGG Ser Asp Arg Gly Met Gly Gln Arg Pro Phe Gln Cys Asn Gln Ser Gly 50 55 #### GCC TCC TTT ACC CAG AAA GGC AAC CTC CTG CGG CAC ATC AAG CTG CAC ALA Ser Phe Thr Gln Lys Gly Asn Leu Leu Arg His Tle Lys Leu His 65 70 80 ##### TCG GGT GAG AAA GGC AAC CTC CTG CGG CAC ATC AAG CTG CAC ALA Ser Phe Thr Gln Lys Gly Asn Leu Leu Arg His Tle Lys Leu His 80 75 80 ##### TCG GGT GAG AAG CCC TTC AAA TGC CAT CTT TGC AAC TAT GCC TGC CGC Ser Gly Glu Lys Pro Phe Lys Cys His Leu Cys Asn Tyr Ala Cys Arg 85 90 #### CGG AGG GAC CTC ACC GGC CAC CTG AGG ACC CTC CTG TGT AAG ARG ARG AAC ARG CTG CTC CTG CAC AAA TGT GAG AAC GAC TAT THIS Ser Val Gly Lys 100 105 110 #### CCT CAC AAA TGT GGA TAT TGT GGC CGG AGC TAT AAA CAG CGA AGC TCT Pro His Lys Cys Gly Tyr Cys Gly Arg Ser Tyr Lys Gln Arg Ser Ser 115 120 #### TTG AGG GAG CAT AAA GAG CGA TGC CAC AAC TAC TGT GAA AGC ATG GGC CTC CAC AAA TGT GGA CAT AAA GAG CGA TGC CAC AAC TAC TTG GAA AGC ATG GGC CTC CCG GGC GTG TGC CAC AAC TAC TTG GAA AGC ATG GGC CTC CCG GGC GTG TGC CAC AAC TAC TTG GAA AGC ATG GGC CTC CCG GGC GTG TGC CAC ATT AAA GAA GAA CTA AAC CAC AAC GAG ACC TCC CGG GGC GTG TGC CAC AAC TAC TTG GAA AGC ATG GGC CTC CCG GGC GTG TGC CAC ATT AAA GAA GAA CTA AAC CAC AAC GAG ACC TTC CCG GGC GTG TGC CAC ATT AAA GAA GAA CTA AAC CAC AAC GAG ACC TTC CCG GGC GTG TGC CAC ATT AAA GAA GAA CTA AAC CAC AAC GAG ACC TTC CCG GGC GTG TGC CAC AAC TAC TAC GAG AAC ATA GAG CAC AAC TAC TAC CTC CTG TCC CTG TCC CTG GAG AAG ACC TTG TGC CTG TCC CT	CCAC	CTCAG	AG G	GGAC	TCAG	A GC	AAGT	CTAG	ATT	TGTG'	TGG (CAGA	GAGA	GA C	AGCT	CTCGT	180
Met Asp Val Asp Glu Gly Gln Asp Met Ser Gln Val Ser Gly Lys Glu 1 10 15 AGC CCC CCA GTC AGT GAG GGA CCT CCA GAT GAA GGG GAT GAG CCC ATG CCT Ser Pro Pro Val Ser Asp Thr Pro Asp Glu Gly Asp Glu Pro Met Pro 20 318 GTC CCT GAG GAC CTG TCC ACT ACC TCT GGA GCA CAG CAG CAG CAG AAC TCC AAG Val Pro Glu Asp Leu Ser Thr Thr Ser Gly Ala Gln Gln Asn Ser Lys 35 366 Val Pro Glu Asp Leu Ser Thr Thr Ser Gly Ala Gln Gln Asn Ser Lys 35 40 AGT GAT CGA GGC ATG GGT GAA CGG CCT TTC CAG TGC AAC CAG TCT GGG Ser Asp Arg Gly Met Gly Gln Arg Pro Phe Gln Cys Asn Gln Ser Gly 50 45 GCC TCC TTT ACC CAG AAA GGC AAC CTC CTG CGG CAC ATC AAG CTG CAC Ala Ser Phe Thr Gln Lys Gly Asn Leu Leu Arg His Ile Lys Leu His 75 80 TCG GGT GAG AAG CCC TTC AAA TGC CAT CTT GC AAC TAT GCC TGC CGC Ser Gly Glu Lys Pro Phe Lys Cys His Leu Cys Asn Tyr Ala Cys Arg 95 510 CGG AGG GAC GCC CTC ACC GGC CAC CTG AGG AGC CAC TCC GTT GGT AAG Arg Arg Asp Ala Leu Thr Gly His Leu Arg Thr His Ser Val Gly Lys 100 55 CCT CAC AAA TGT GGA TAT TGT GGC CGG AGC TAT AAA CAG CGA AGC TCT Pro His Lys Cys Gly Tyr Cys Gly Arg Ser Tyr Lys Gln Arg Ser Ser 115 558 TTA GAG GAG CAT AAA GAG CAT TAAA GAG CAA CAC TAC TTG GAA AGC ATG GGC Leu Glu Glu His Lys Glu Arg Cys His Asn Tyr Leu Glu Ser Met Gly 135 606 CCT CAC AAA TGT GGA TGC CAC ATC AAC TAC TTG GAA AGC ATG GGC Leu Glu Glu His Lys Glu Arg Cys His Asn Tyr Leu Glu Ser Met Gly 135 654 Leu Glu Glu His Lys Glu Arg Cys His Asn Tyr Leu Glu S	TTG	CCTI	rgg G	GAGG	CACA	A GT	CTGT	TGAT	AAC	CTGA	AGA	CA					222
Ser Pro Pro Val Ser Asp Thr Pro Asp Glu Gly Asp Glu Pro Met Pro 30 GTC CCT GAG GAC CTG TCC ACT ACC TCT GGA GCA CAG CAG ACC TCC AAG Val Pro Glu Asp Leu Ser Thr Thr Ser Gly Ala Gln Gln Asn Ser Lys 35 AGT GAT CGA GGC ATG GGT GAA CGG CCT TTC CAG TGC AAC CAG TCT GGG Ser Asp Arg Gly Met Gly Gln Arg Pro Phe Gln Cys Asn Gln Ser Gly 50 GCC TCC TTT ACC CAG AAA GGC AAC CTC CTG CGG CAC ATC AAG CTG CAC Ala Ser Phe Thr Gln Lys Gly Asn Leu Leu Arg His Ile Lys Leu His 65 TCG GGT GAG AAG CCC TTC AAA TGC CAT CTT TGC AAC TAT GCC TGC CGC Ser Gly Glu Lys Pro Phe Lys Cys His Leu Cys Asn Tyr Ala Cys Arg 85 CGG AGG GAC GCC CTC ACC GGC CAC CTG AGG ACG CAC TCC GTT GGT AAG Arg Arg Asp Ala Leu Thr Gly His Leu Arg Thr His Ser Val Gly Lys 100 CCT CAC AAA TGT GGA TAT TGT GGC CGG AGC TAT AAA CAG CGA AGC TCT Pro His Lys Cys Gly Tyr Cys Gly Arg Ser Tyr Lys Gln Arg Ser Ser 115 TTA GAG GAG CAT AAA GAG CGA TGC CAC AAC TAC TGG GAA AGC TCT Pro His Lys Cys Gly Tyr Cys Gly Arg Ser Tyr Lys Gln Arg Ser Ser 115 TTA GAG GAG CAT AAA GAG CGA TGC CAC AAC TAC TGC GAA AGC TCT Pro Gly Val Cys Pro Val Ile Lys Glu Glu Thr Asn His Asn Glu 135 CTT CCG GGC GTG TGC CAC GTC ATC AAG GAA AAC TAC CAC AAC GAG ATG GCA GAA GAC CTT TCC AAG ATA GAG AGA ACC TTC GTC CTG ATG GCA GAA GAC CTG TGC AAA ATA GGA GCA GAG AGC TCT TGC CTG GTG TGC CAC AAC TAC TAC GAG GAG TCC CTT GTC CTG ATG GCA GAA GAC CTG TGC AAA ATA GGA GCA GAG AGC TCT TGT CTG CTG TGC CTG ATG GCA GAA GAC CTG TGC AAA ATA GGA GCA GAG AGC TCT TGTC CTG ATG GCA GAA GAC CTG TGC AAA ATA GGA GCA GAG AGC TCT TGTC CTG ATG GCA GAA GAC CTG TGC AAA ATA GGA GCA GAG AGC TCT TGTC CTG ATG GCA GAA GAC CTG TGC AAA ATA GGA GCA GAG AGC TCT TGTC CTG ATG GCA GAA GAC CTG TGC AAA ATA GGA GCA GAG AGC TCT ATG CCT CAG ATG GCA GAG GCA GAC AAT GTC GCC AAA CGT AAA GCT ATG CCT CAG ATG GCA GAG CTG GCA AAC ATT GTC GCC AAA CGT AAA GCT TATG CCT CAG ATG GCA GAG CTG GCA AAC ATT GTC GCC AAA CGT AAA GCT TATG CCT CAG ATG GCA GAG CTG GCA AAC ATT GTC GCC AAA CGT AAA GCT TATG CCT CAG ATG AGG CTG GCA AAC AAT GTC GCC AAA CGT AAA GCT TATG CCT CAG ATG AGG CT	Met	GAT Asp	GTC Val	GAT Asp	Glu	GGT Gly	CAA (GAC Asp	Met	Ser	CAA Gln	GTT Val	TCA (Ser	Gly	Lys	GAG Glu	270
Val Pro Glu Asp Leu Ser Thr Thr Ser Gly Ala Gln Gln Asn Ser Lys 45 AGT GAT CGA GGC ATG GGT GAA CGG CCT TTC CAG TGC AAC CAG TCT GGG Ser Asp Arg Gly Met Gly Gln Arg Pro Phe Gln Cys Asn Gln Ser Gly 50 GCC TCC TTT ACC CAG AAA GGC AAC CTC CTG CGG CAC ATC AAG CTG CAC Ala Ser Phe Thr Gln Lys Gly Asn Leu Leu Arg His Ile Lys Leu His 65 TO TCG GGT GAG AAG CCC TTC AAA TGC CAT CTT TGC AAC TAT GCC TGC CGC Ser Gly Glu Lys Pro Phe Lys Cys His Leu Cys Asn Tyr Ala Cys Arg 85 CGG AGG GAC GCC CTC ACC GGC CAC CTG AGG ACG CAC TCC GTT GGT AAG Arg Arg Asp Ala Leu Thr Gly His Leu Arg Thr His Ser Val Gly Lys 100 CCT CAC AAA TGT GGA TAT TGT GGC CGG AGC TAT AAA CAG CGA AGC TCT Pro His Lys Cys Gly Tyr Cys Gly Arg Ser Tyr Lys Gln Arg Ser Ser 115 TTA GAG GAG CAT AAA GAG CGA TGC CAC CAC AAC TAC TTG GAA AGC TCT Leu Glu Glu His Lys Glu Arg Cys His Asn Tyr Leu Glu Ser Met Gly 130 CTT CCG GGC GTG TGC CCA GTC ATT AAG GAA GAA ACT AAC CAC AAC GAG Leu Pro Gly Val Cys Pro Val Ile Lys Glu Glu Thr Asn His Asn Glu 145 ATG GCA GAA GAC CTG TGC AAG ATA GGA GAA GAA ACT AAC CAC AAC GAG ATG GCA GAA GAC CTG TGC AAG ATA GGA GAA AGG TCC CTT GTC CTG Met Ala Glu Asp Leu Cys Lys Ile Gly Ala Glu Arg Ser Leu Val Leu 165 GAC AGG CTG GCA AGC AAT GTC GCC AAA CTT AAG GAC TCT ATG CCT CAG Asp Arg Leu Ala Ser Asn Val Ala Lys Arg Lys Ser Ser Met Pro Gln Asp Arg Leu Ala Ser Asn Val Ala Lys Arg Lys Ser Ser Met Pro Gln Asp Arg Leu Ala Ser Asn Val Ala Lys Arg Lys Ser Ser Met Pro Gln Asp Arg Leu Ala Ser Asn Val Ala Lys Arg Lys Ser Ser Met Pro Gln Asp Arg Leu Ala Ser Asn Val Ala Lys Arg Lys Ser Ser Met Pro Gln	AGC Ser	CCC Pro	CCA Pro	Val	AGT Ser	GAC Asp	ACT Thr	CCA Pro	Asp	GAA Glu	GGG	GAT Asp	Glu	Pro	ATG Met	CCT Pro	318
Ser Asp Arg Gly Met Gly Gln Arg Pro Phe Gln Cys Asn Gln Ser Gly 50 55 60 60 60 60 60 60 60 60 60 60 60 60 60			Glu					Thr					Gln				366
Ala Ser Phe Thr Gln Lys Gly Asn Leu Leu Arg His Ile Lys Leu His 65 70 75 80 TCG GGT GAG AAG CCC TTC AAA TGC CAT CTT TGC AAC TAT GCC TGC CGC Ser Gly Glu Lys Pro Phe Lys Cys His Leu Cys Asn Tyr Ala Cys Arg 85 90 95 CGG AGG GAC GCC CTC ACC GGC CAC CTG AGG ACG CAC TCC GTT GGT AAG Arg Arg Asp Ala Leu Thr Gly His Leu Arg Thr His Ser Val Gly Lys 100 105 110 CCT CAC AAA TGT GGA TAT TGT GGC CGG AGC TAT AAA CAG CGA AGC TCT Pro His Lys Cys Gly Tyr Cys Gly Arg Ser Tyr Lys Gln Arg Ser Ser 115 120 125 TTA GAG GAG CAT AAA GAG CGA TGC CAC AAC TAC TTG GAA AGC ATG GGC Leu Glu Glu His Lys Glu Arg Cys His Asn Tyr Leu Glu Ser Met Gly 130 135 140 CTT CCG GGC GTG TGC CCA GTC ATT AAG GAA GAA ACT AAC CAC AAC GAG Leu Pro Gly Val Cys Pro Val Ile Lys Glu Glu Thr Asn His Asn Glu 145 150 155 160 ATG GCA GAA GAC CTG TGC AAG ATA GGA GCA GAG AGC TCT TGT CTG Met Ala Glu Asp Leu Cys Lys Ile Gly Ala Glu Arg Ser Leu Val Leu 165 170 175 GAC AGG CTG GCA AGC AAT GTC GCC AAA CGT AAG AGC TCT ATG CTC CAG Asp Arg Leu Ala Ser Asn Val Ala Lys Arg Lys Ser Ser Met GIT		Asp					Gln					Cys					414
Ser Gly Glu Lys Pro Phe Lys Cys His Leu Cys Asn Tyr Ala Cys Arg 85 90 95 CGG AGG GAC GCC CTC ACC GGC CAC CTG AGG ACG CAC TCC GTT GGT AAG Arg Arg Arg Asp Ala Leu Thr Gly His Leu Arg Thr His Ser Val Gly Lys 100 105 110 CCT CAC AAA TGT GGA TAT TGT GGC CGG AGC TAT AAA CAG CGA AGC TCT 606 Pro His Lys Cys Gly Tyr Cys Gly Arg Ser Tyr Lys Gln Arg Ser Ser 115 120 125 TTA GAG GAG CAT AAA GAG CGA TGC CAC AAC TAC TTG GAA AGC ATG GGC 654 Leu Glu Glu His Lys Glu Arg Cys His Asn Tyr Leu Glu Ser Met Gly 130 135 140 CTT CCG GGC GTG TGC CCA GTC ATT AAG GAA GAA ACT AAC CAC AAC GAG 702 Leu Pro Gly Val Cys Pro Val Ile Lys Glu Glu Thr Asn His Asn Glu 145 150 155 160 ATG GCA GAA GAC CTG TGC AAG ATA GGA GCA GAG AGG TCC CTT GTC CTG 750 Met Ala Glu Asp Leu Cys Lys Ile Gly Ala Glu Arg Ser Leu Val Leu 165 170 175 GAC AGG CTG GCA AGC AAT GTC GCC AAA CGT AAG AGC TCT ATG CCT CAG 798 Asp Arg Leu Ala Ser Asn Val Ala Lys Arg Lys Ser Ser Met Pro Gln	Ala					Lys					Arg					His	462
Arg Arg Asp Ala Leu Thr Gly His Leu Arg Thr His Ser Val Gly Lys 100 CCT CAC AAA TGT GGA TAT TGT GGC CGG AGC TAT AAA CAG CGA AGC TCT Pro His Lys Cys Gly Tyr Cys Gly Arg Ser Tyr Lys Gln Arg Ser Ser 115 TTA GAG GAG CAT AAA GAG CGA TGC CAC AAC TAC TTG GAA AGC ATG GGC Leu Glu Glu His Lys Glu Arg Cys His Asn Tyr Leu Glu Ser Met Gly 130 CTT CCG GGC GTG TGC CCA GTC ATT AAG GAA GAA ACT AAC CAC AAC GAG Leu Pro Gly Val Cys Pro Val Ile Lys Glu Glu Thr Asn His Asn Glu 145 ATG GCA GAA GAC CTG TGC AAG ATA GGA GCA GAG AGG TCC CTT GTC CTG Met Ala Glu Asp Leu Cys Lys Ile Gly Ala Glu Arg Ser Leu Val Leu 165 GAC AGG CTG GCA AGC AAT GTC GCC AAA CGT AAG AGC TCT ATG CCT CAG Asp Arg Leu Ala Ser Asn Val Ala Lys Arg Lys Ser Ser Met Pro Gln					Pro					Leu					Cys		510
Pro His Lys Cys Gly Tyr Cys Gly Arg Ser Tyr Lys Gln Arg Ser Ser 115 120 125 TTA GAG GAG CAT AAA GAG CGA TGC CAC AAC TAC TTG GAA AGC ATG GGC 654 Leu Glu Glu His Lys Glu Arg Cys His Asn Tyr Leu Glu Ser Met Gly 130 135 140 CTT CCG GGC GTG TGC CCA GTC ATT AAG GAA GAA ACT AAC CAC AAC GAG 702 Leu Pro Gly Val Cys Pro Val Ile Lys Glu Glu Thr Asn His Asn Glu 145 150 155 160 ATG GCA GAA GAC CTG TGC AAG ATA GGA GCA GAG AGG TCC CTT GTC CTG Met Ala Glu Asp Leu Cys Lys Ile Gly Ala Glu Arg Ser Leu Val Leu 165 170 175 GAC AGG CTG GCA AGC AAT GTC GCC AAA CGT AAG AGC TCT ATG CCT CAG Asp Arg Leu Ala Ser Asn Val Ala Lys Arg Lys Ser Ser Met Pro Gln				Ala	Leu			His	Leu				Ser	Val			558
Leu Glu Glu His Lys Glu Arg Cys His Asn Tyr Leu Glu Ser Met Gly 130 135 140 CTT CCG GGC GTG TGC CCA GTC ATT AAG GAA GAA ACT AAC CAC AAC GAG Leu Pro Gly Val Cys Pro Val Ile Lys Glu Glu Thr Asn His Asn Glu 145 150 ATG GCA GAA GAC CTG TGC AAG ATA GGA GCA GAG AGG TCC CTT GTC CTG Met Ala Glu Asp Leu Cys Lys Ile Gly Ala Glu Arg Ser Leu Val Leu 165 170 GAC AGG CTG GCA AGC AAT GTC GCC AAA CGT AAG AGC TCT ATG CCT CAG Asp Arg Leu Ala Ser Asn Val Ala Lys Arg Lys Ser Ser Met Pro Gln			Lys	Cys				Gly	Arg				Gln	Arg			606
Leu Pro Gly Val Cys Pro Val Ile Lys Glu Glu Thr Asn His Asn Glu 145 150 155 160 ATG GCA GAA GAC CTG TGC AAG ATA GGA GCA GAG AGG TCC CTT GTC CTG Met Ala Glu Asp Leu Cys Lys Ile Gly Ala Glu Arg Ser Leu Val Leu 165 170 175 GAC AGG CTG GCA AGC AAT GTC GCC AAA CGT AAG AGC TCT ATG CCT CAG Asp Arg Leu Ala Ser Asn Val Ala Lys Arg Lys Ser Ser Met Pro Gln		ı Glu	. Glu				Arg	Cys				Leu	Glu				6 54
Met Ala Glu Asp Leu Cys Lys Ile Gly Ala Glu Arg Ser Leu Val Leu 165 170 175 GAC AGG CTG GCA AGC AAT GTC GCC AAA CGT AAG AGC TCT ATG CCT CAG Asp Arg Leu Ala Ser Asn Val Ala Lys Arg Lys Ser Ser Met Pro Gln	Le	u Pro				Pro	Val				Glu	Thr				Glu	702
Asp Arg Leu Ala Ser Asn Val Ala Lys Arg Lys Ser Ser Met Pro Gln					Lev	ı Cys				/ Ala	Glu				Val	. Leu	750
				a Ala	a Ser				Lys	Arg				Met	Pro	Gln	

AAA :	rtt Phe	CTT Leu 195	GGA Gly	GAC Asp	AAG Lys	TGC Cys	CTG Leu 200	TCA Ser	GAC Asp	ATG Met	CCC Pro	TAT Tyr 205	GAC A	AGT Ser	GCC Ala	846	
	Tyr 210	Glu	Lys	Glu	Asp	Met 215	Met	Thr	Ser	His	Val 220	Met	Asp	GIN	Ala	894	
ATC . Ile . 225	AAC Asn	AAT Asn	GCC Ala	ATC Ile	AAC Asn 230	TAC Tyr	CTG Leu	GGG Gly	GCT Ala	GAG Glu 235	TCC Ser	CTG Leu	CGC Arg	CCA Pro	TTG Leu 240	942	
GTG Val	CAG Gln	ACA Thr	CCC Pro	CCC Pro 245	GGT Gly	AGC Ser	TCC Ser	GAG Glu	GTG Val 250	GTG Val	CCA Pro	GTC Val	ATC Ile	AGC Ser 255	TCC Ser	990	
ATG Met	TAC Tyr	CAG Gln	CTG Leu 260	CAC His	AAG Lys	CCC Pro	CCC Pro	TCA Ser 265	GAT Asp	GGC Gly	CCC	CCA Pro	CGG Arg 270	TCC Ser	AAC Asn	1038	
CAT His	TCA Ser	GCA Ala 275	CAG Gln	GAC Asp	GCC Ala	GTG Val	GAT Asp 280	AAC Asn	TTG Leu	CTG Leu	CTG Leu	CTG Leu 285	TCC Ser	AAG Lys	GCC Ala	1086	
AAG Lys	TCT Ser 290	GTG Val	TCA Ser	TCG Ser	GAG Glu	CGA Arg 295	GAG Glu	GCC Ala	TCC Ser	CCG Pro	AGC Ser 300	Asn	AGC Ser	TGC Cys	CAA Gln	1134	•
GAC Asp 305	TCC Ser	ACA Thr	GAT Asp	ACA Thr	GAG Glu 310	AGC Ser	AAC Asn	GCG Ala	GAG Glu	GAA Glu 315	Glr	G CGC	AGC Ser	GGC	CTT Leu 320	1182	2
ATC Ile	TAC Tyr	CTA Leu	ACC Thr	AAC Asn 325	CAC His	ATC Ile	AAC Asn	CCG Pro	CAT His	Ala	CG(CAAT ASI	GGG Gly	CTC Let 33!	G GCT 1 Ala 5	1230	0
CTC Leu	AAG Lys	GAG Glu	GAG Glu 340	CAG Gln	CGC	GCC	TAC	GAG Glu 345	[Va]	CTC Lev	AGO Arg	g GC0	GCC A Ala 350	Se	A GAG r Glu	127	8
AAC Asn	TCG Ser	CAG Gln 355	Asp	GCC	TTC	CGT Arg	GTO Val	Val	: AGC	C ACC	G AG	T GGG r Gl; 36	y Glı	G CA	G CTG n Leu	132	6
AAG Lys	GTG Val 370	Tyr	AAG Lys	TGC Cys	GAA Glu	CAC His	Cys	C CGC S Arg	GT(G CT(TT u Ph . 38	e Le	G GA' u Asj	r CA Hi	C GTC s Val	137	14
ATG Met 385	Tyr	ACC Thr	ATT	CAC His	ATG Met	Gly	TGC Cys	C CAT	GG Gl	TG(Y Cy: 39:	s Hi	T GG s Gl	C TT y Ph	T CG e Ar	G GAT G Asp 400	142	22
CCC Pro	TTT Phe	GAG	TGT Cys	Asn	Met	TG1	GGT Gly	r TAT Y Tyr	Hi	s Se	C CA r Gl	G GA n As	C AG p Ar	g T)	AC GAG	14	70
				405					41	U				41		G. 1	В

		hr Arg Gly (TAC CAC CTG Tyr His Leu 430	Ser	1515
TAAACCCAGC	CAGGCCCCAC	TGAAGCACAA	AGATAGCTGG	TTATGCCTCC	TTCCCGGCAG	1575
CTGGACCCAC	AGCGGACAAT	GTGGGAGTGG	ATTTGCAGGC	AGCATTTGTT	CTTTTATGTT	1635
GGTTGTTTGG	CGTTTCATTT	GCGTTGGAAG	ATAAGTTTTT	AATGTTAGTG	ACAGGATTGC	1695
ATTGCATCAG	CAACATTCAC	AACATCCATC	CTTCTAGCCA	GTTTTGTTCA	CTGGTAGCTG	1755
AGGTTTCCCG	GATATGTGGC	TTCCTAACAC	TCT			1788
(SEQ.ID.NO	£ 1)					

FIG. 1C

AAT Asn 1	GTT Val	AAA Lys	GTA Val	GAG Glu 5	ACT Thr	CAG Gln	AGT Ser	GAT Asp	GAA Glu 10	GAG . Glu	AAT Asn	GGG Gly	CGT Arg	GCC Ala 15	TG Cy	T	48
GAA Glu	ATG Met	AAT Asn	GGG Gly 20	GAA Glu	GAA Glu	TGT Cys	GCG Ala	GAG Glu 25	GAT Asp	TTA Leu	CGA Arg	ATG Met	CTT Leu 30	GAT Asp	G(CC la	96
TCG Ser	GGA Gly	GAG Glu 35	AAA Lys	ATG Met	AAT Asn	GGC Gly	TCC Ser 40	CAC His	AGG Arg	GAC Asp	CAA Gln	GGC Gly 45	AGC Ser	TCG	G A	CT la	144
TTG Leu	TCG Ser 50	GGA Gly	GTT Val	GGA Gly	GGC Gly	ATT Ile 55	CGA Arg	CTT Leu	CCT Pro	AAC Asn	GGA Gly 60	AAA Lys	CTA Leu	. AAG Lys	T C	GT ys	192
GAT Asp 65	ATC Ile	TGT Cys	GGG Gly	ATC Ile	ATT Ile 70	TGC Cys	ATC Ile	GGG Gly	CCC Pro	AAT Asn 75	GTG Val	CTC	ATG Met	GTT Val	H	AC is 80	240
AAA Lys	AGA Arg	AGC Ser	CAC His	ACT Thr 85	GGA Gly	GAA Glu	CGG Arg	CCC Pro	TTC Phe 90	CAG Gln	TGC Cys	AAT Asn	CAG Glr	TGC Cys	5 G	GG ly	288
	TCA Ser													Le			336
TCC Ser	GGG Gly	GAG Glu 115	AAG Lys	CCC Pro	TTC Phe	AAA Lys	TGC Cys 120	CAC His	CTC	TGC Cys	AAC Asn	TAC Tyr 125	Ala	c TG	c c	arg Arg	384
CGG Arg	AGG Arg 130	GAC Asp	GCC Ala	CTC Leu	ACT Thr	GGC Gly 135	His	CTG Leu	AGG Arg	ACG Thr	His	Sei	C GT r Va	T GG 1 Gl	T . Y	AAA Lys	432
CCT Pro 145	CAC His	AAA Lys	TGT Cys	GGA Gly	TAT Tyr 150	Cys	GGC Gly	CGA Arg	AGC Ser	TAT Tyr 155	: Lys	A CAG	g CG n Ar	A AC	:G ir	TCT Ser 160	480
TTA Leu	GAG Glu	GAA Glu	CAT His	AAA Lys 165	Glu	CGC Arg	TGC Cys	CAC His	AAC ASI 170	туз	TTC	G GA u Gl	A AG u Se	er Me	rG et 75	GGC Gly	528
	CCG Pro			Leu					Ly					s H			576
	ATG Met		Glu					: Ile					g Se				624
	GAC Asp 210	Arg					ı Val					s Se					672
	Lys					Lys					p Th					AGT Ser 240	FIG. 2A

														ATG Met 255		768
														CTG Leu		816
CCG Pro	CTG Leu	GTG Val 275	CAG Gln	ACG Thr	CCC Pro	CCG Pro	GGC Gly 280	GGT Gly	TCC Ser	GAG Glu	GTG Val	GTC Val 285	CCG Pro	GTC Val	ATC Ile	864
Ser	Pro 290	Met	Tyr	Gln	Leu	His 295	Arg	Arg	Ser	Glu	Gly 300	Thr	Pro	Arg	Ser	912
Asn 305	His	Ser	Ala	Gln	Asp 310	Ser	Ala	Val	Glu	Tyr 315	Leu	Leu	Leu	CTC	Ser 320	960
Lys	Ala	Lys	Leu	Val 325	Pro	Ser	Glu	Arg	Glu 330	Ala	Ser	Pro	Ser	AAC Asn 335	Ser	1008
Cys	Gln	Asp	Ser 340	Thr	Asp	Thi	Glu	Ser 345	Asn	Asn	Glu	Glu	Gln 350	Arg	AGC Ser	1056
Gly	Leu	Ile 355	Tyr	Leu	Thr	Asn	His 360	Ile	Ala	Arg	Arg	Ala 365	Glr	Arg	Val	1104
Ser	Leu 370	Lys	Glu	Glu	His	Arg 375	Ala	Tyr	: Asp	Leu	380	Arg	Ala	a Ala	TCC Ser	1152
Glu 385	Asn	Ser	Gln	Asp	Ala 390	Leu	Arg	Val	. Val	Ser 395	Thi	Ser	Gl;	y Gli	G CAG 1 Gln 400	1200
Met	Lys	Val	Tyr	Lys 405	Cys	Glu	His	Cys	Arg 410	Val	. Le	ı Phe	e Le	u As 41		:
Val	Met	Tyr	Thr 420	Ile	His	Met	Gly	7 Cys 425	His	Gly	y Phe	e Arg	g As 43	p Pr 0	T TTT o Phe	
Glu	Cys	Asn 435	Met	Cys	Gly	Tyr	His	Sei	c Glr	ı Ası) Ar	g Ty: 44:	r Gl 5	u Ph	C TCG e Ser	
			ACG Thr									t Se		A		1386

FIG. 2B

Ex6 TQSDEENGRA CEMNGEECAE DLRMLDASGE KMNGSHRDQG SSALSGVGGI RLPNGKLK ACRRRDALTG HLRTHSVGKP HKCGYCGRSY KORSSLEEHK ERCHNYLESM GLPGMYPVIK MDVDEGQDMS QVSGKESPPV SDTPDEGDEP MPVPEDLSTT SGAQQNSKSD RGMASNVKVE ICGIVCIGPN VLMVHKRSHT GERPFQCNQC GASFTOKGNL LRHIKLHSGE KPFKCHLCNY EETNHNEMAE DLCKIGAERS LVLDRLASNV AKRKSSMPQK FLGDKCLSDM PYDSANYEKE DMMTSHVMDQ AINNAINYLG AESLRPLVQT PPGSSEVVPV ISSMYQLHKP PSDGPPRSNH SAQDAVDNLL LLSKAKSVSS EREASPSNSC QDSTDTESNA EEQRSGLIYL TNHINPHARN GLALKEEQRA YEVLRAASEN SQDAFRVVST SGEQLKVYKC EHCRVLFLDH VMYTIHMGCH **E**x3 (SEQ ID NO: 4) Ex7 GCHGFRDPFE CNMCGYHSOD RYEFSSHITR GEHRYHLS EX4 Ex5 ΪŢ Ex1/2

FIG. 3

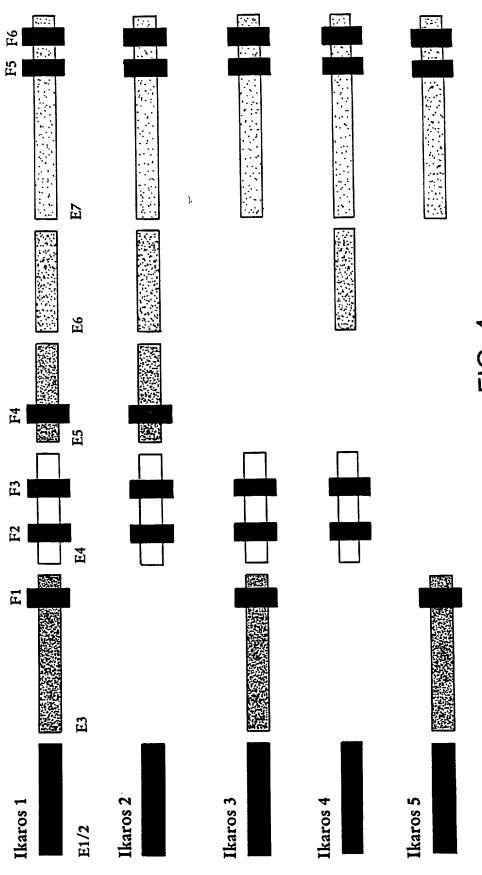
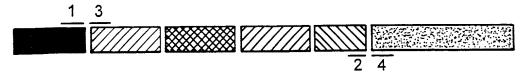
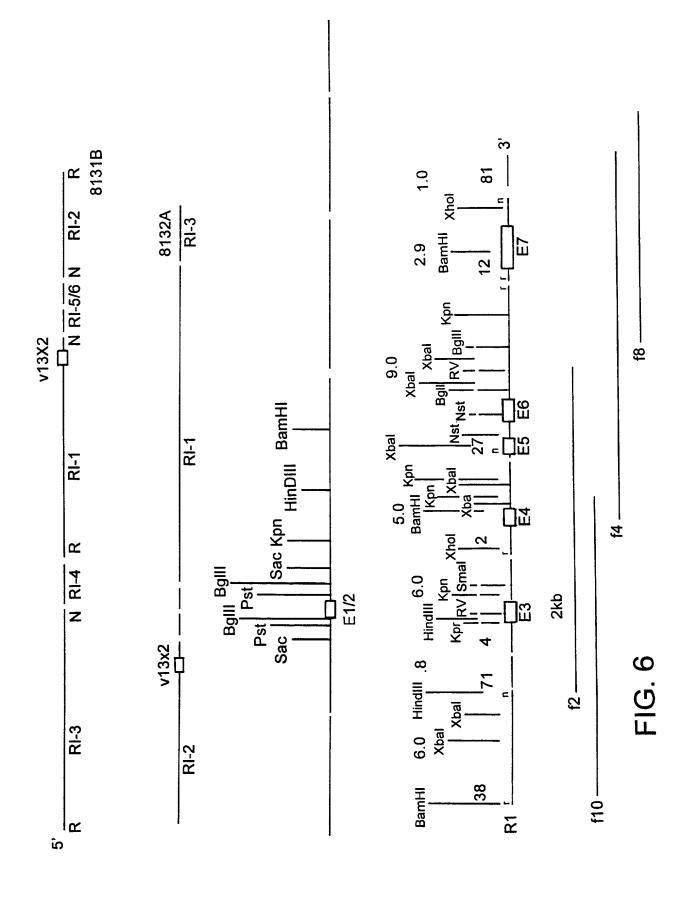


FIG. 4

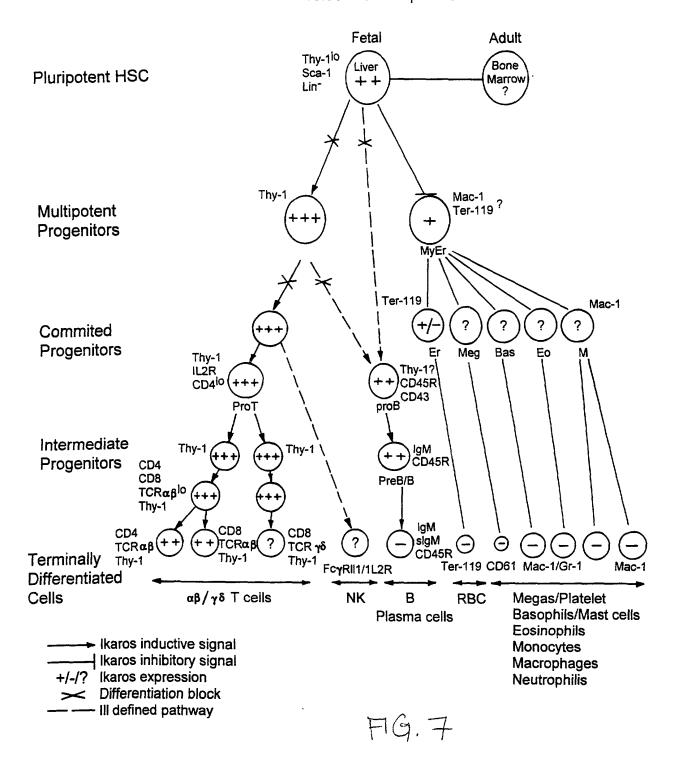


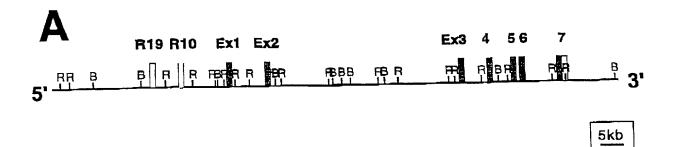
Oligo1/2 IK-1/IK-2/IK-4 Oligo3/4 IK-1/IK-3/IK-5

FIG. 5



An Ikaros view of the hemopoletic system; expression and potential roles in development





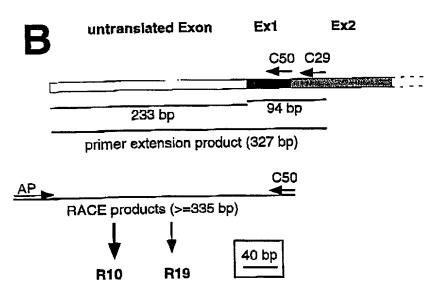
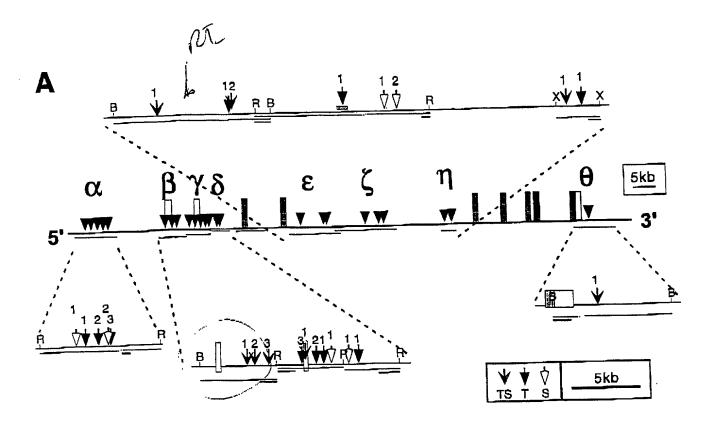


FIG. 8



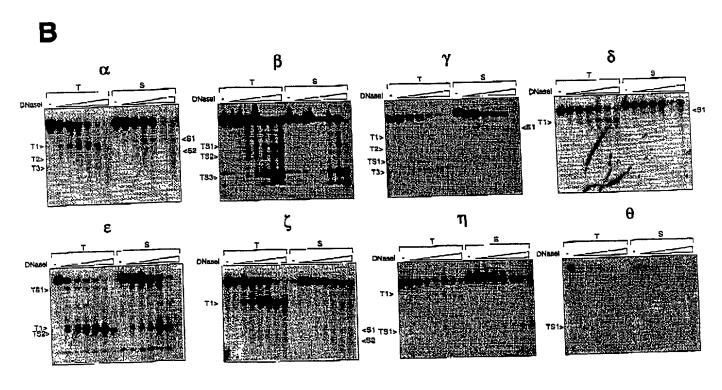
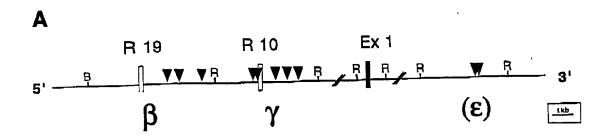
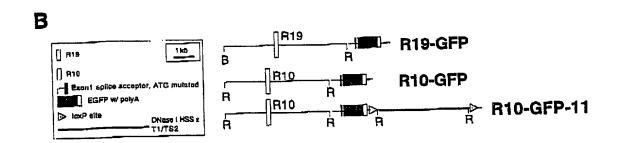


FIG.9

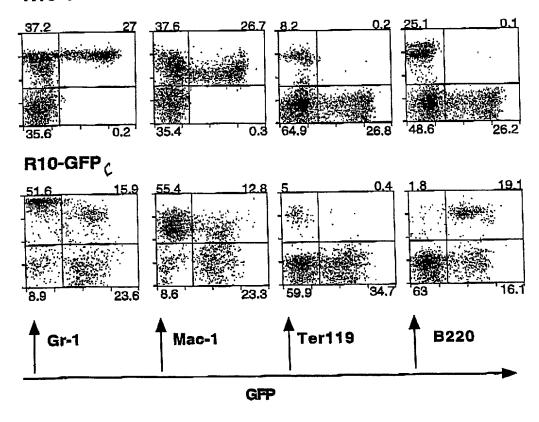




F16,10

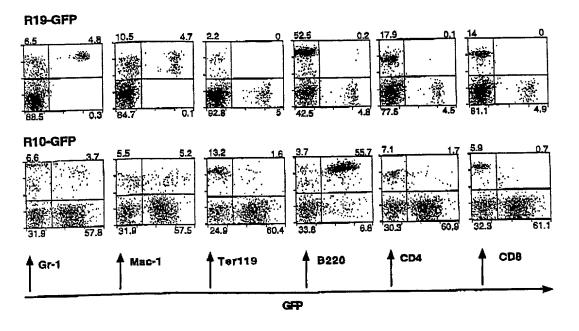
Bone Marrow

R19-GFPF



F19.11

Spieen



F16,12

